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New provincial discoveries of the genus *Catapiestus* Perty, 1831 from China (Coleoptera: Tenebrionidae: Stenochiinae)

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Abstract: New provincial records of two *Catapiestus* species from China are reported: *C. bispinosus* Yang & Guo, 2018 was newly found from Guangxi, Yunnan, Sichuan and Fujian Provinces; *C. clavipes* Lang & Ren, 2009 was newly found from Fujian Province. Habitus and diagnostic characters of the above two species are illustrated, along with a distribution map.

Keywords: China, darkling beetles, new records, taxonomy

中国扁轴甲属之省级新发现（鞘翅目：拟步甲科：树甲亚科）

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摘要：本研究报道中国扁轴甲属 *Catapiestus* 两个物种的新省级纪录：新发现于广西、云南、四川和福建的双棘扁轴甲 *C. bispinosus* Yang & Guo, 2018 以及新发现于福建的棒股扁轴甲 *C. clavipes* Lang & Ren, 2009，并提供上述两个物种的形态特征图和分布地图。

关键词：中国，拟步甲，新纪录，分类学

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Introduction

The genus *Catapiestus* Perty, 1831 belongs to the tribe Cnodalonini (Coleoptera, Tenebrionidae, Stenochiinae) (Bouchard *et al*. 2021). It contains 13 known species in Oriental and Palaearctic Regions, with 6 species distributed in China (Lang & Ren 2009; Yang & Guo 2018; Iwan *et al*. 2020).

During recent field investigations in South China, some interesting specimens were collected by the author. After examining the materials, certain new provincial records are presented, including *Catapiestus bispinosus* Yang & Guo, 2018 from Guangxi, Yunnan, Sichuan and Fujian, and *C. clavipes* Lang & Ren, 2009 from Fujian. As a result, diagnosis, illustrations and distributions of these two species are provided in this paper.

Material and methods

Specimens examined in this study are deposited in the Insect Collection of College of Plant Protection, Hunan Agricultural University, Changsha, China (HNAU) and the personal collection of Tao-Kun Liao, Fujian, China (CTKL). Specimens were softened in distilled water and examined with a stereoscopic dissecting microscope. Habitus images were taken using a Sony ILCE-7CII camera with a Laowa FF 100 mm f/2.8L Macro 2:1 Lens. Character images were taken using a Sony ILCE-7CII camera with a Laowa 25 mm F2.8 2.5-5× Ultra Macro Lens. A SHDM-150 dome light source was used as the light source. Images at different focal planes of each specimen were combined with Helicon Focus 6.7.1. All images were modified using Adobe Photoshop CC 2019.

Taxonomy

Genus *Catapiestus* Perty, 1831 扁轴甲属

Catapiestus bispinosus Yang & Guo, 2018 双棘扁轴甲

Figs 1A–F; 2A–E; 5

Catapiestus bispinosus Yang & Guo, 2018: 50.

Type locality: “China, Guizhou Province, Leishan County, Leigongshan National Nature Reserve”.

Material examined. 1♂1♀ (HNAU), **Sichuan,** Bazhong City, Guangwushan, 32°41'45"N, 106°47'36"E, 1281 m, 2024-VI-27, Yu-Zhou Huang leg.; 1♂ (HNAU), **Yunnan,** Zhaotong City, Weixin County, Houshan Forest Farm, 1500 m, 2024-IV-1, Cai-Fu Tao leg.; 1♀ (HNAU), **Yunnan,** Zhaotong City, Weixin County, Houshan Forest Farm, 1500 m, 2021-IV-24, Cai-Fu Tao leg.; 1♂ (HNAU), **Guangxi,** Guilin City, Ziyuan County, Jinzishan, 26°10'24"N, 110°29'24"E, 1745 m, 2024-VIII-24, Yu-Zhou Huang leg.; 1♀ (HNAU), **Guangxi,** Guilin City, Ziyuan County, Yinzhulaoshan, 2021-IV-13, local leg.; 1♂3♀♀ (HNAU), **Fujian**, Nanping City, Wuyishan City, Xingcun Town, 27°44'37"N, 117°44'47"E, 1620 m, 2024-XI, Tao-Kun Liao leg.

Diagnosis. Body flat, reddish brown to black, sides nearly parallel. Length 12.9–14.9 mm, width 4.0–4.5 mm. Head transverse, trapezoidal, and densely punctured. Pronotum nearly hexagonal, transverse; disc convex around a shallow mid-longitudinal groove, inner half of disc with fine and periphery with coarse punctures; anterior angles acute, distinctly protruding; posterior angles nearly right; anterior 4/5 of lateral margins with 5–6 undulating teeth. Elytra nearly parallel, each elytron with 9 punctured striae; intervals slightly punctured, 7th ridged on basal 2/5, extending to apical 3/5 of 6th. Male profemora densely punctured, with two subtriangular denticles obliquely pointing outwards in ventral view, one smaller at basal 1/3 and one larger near apex; meso- and metafemora slender, with one small denticle near apex in ventral view.

Remarks. The records in the border of Sichuan, Yunnan, Guangxi and Fujian evidence the probability of more provincial records for this species. Its occurrence in northeast Sichuan adjoining Shaanxi makes it the northernmost known species, extending the distribution of the genus *Catapiestus* to 32°N.

According to the origin paper, female was described as having no apparent external sexual dimorphism except

a slightly smaller body. However, the female specimens examined in this paper all have larger body sizes than males in the same locality. Moreover, the specimens exhibit external sexual dimorphism: Female pro-, meso- and metafemora without denticles.

Distribution. China: Guizhou (original record); Fujian, Guangxi, Sichuan, Yunnan (**new records**).

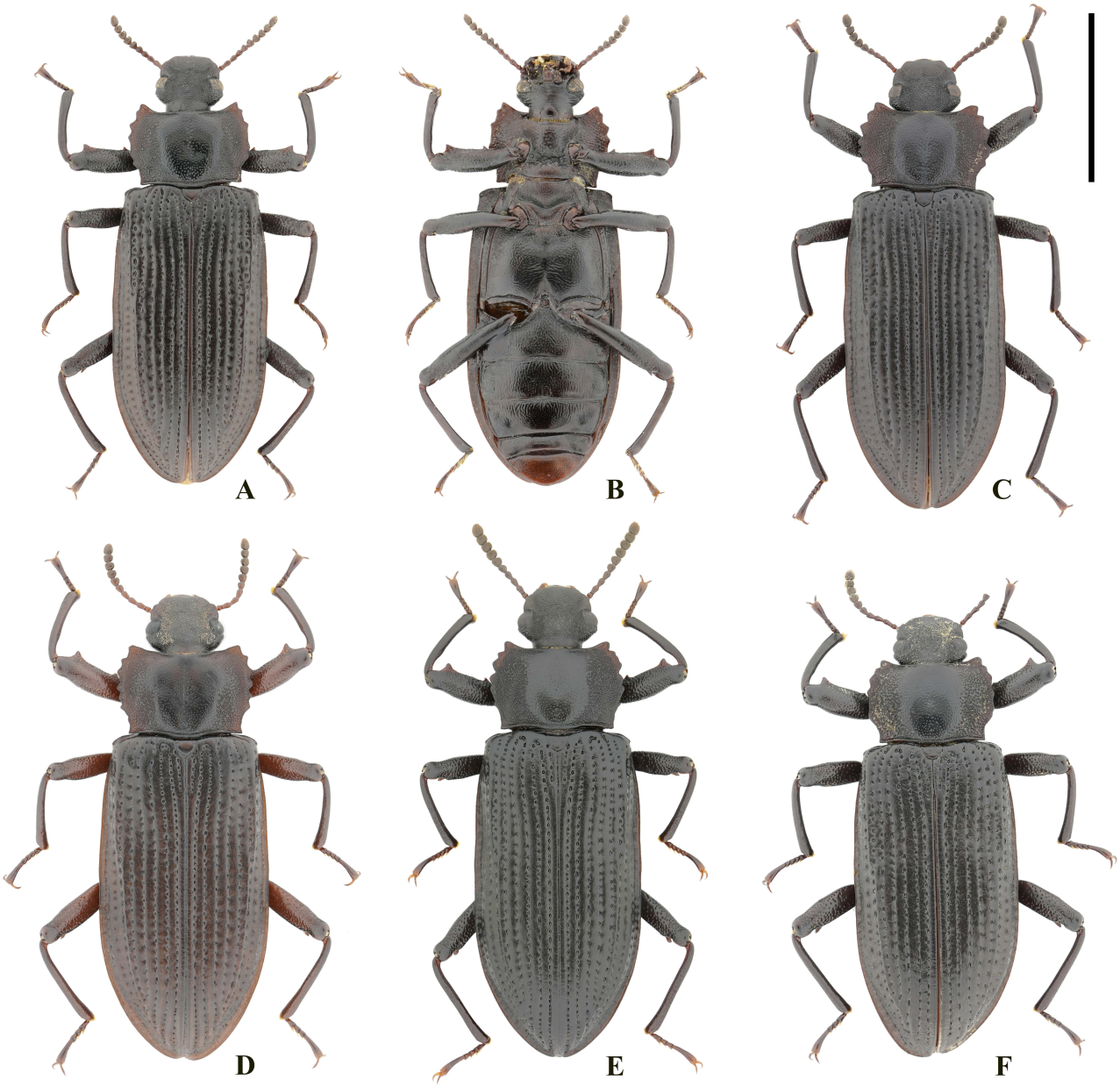

FIGURE 1. Habitus of *Catapiestus bispinosus* Yang & Guo, 2018: **A, B** dorsal and ventral views of male (Guangxi) **C** dorsal view of female (Guangxi) **D** dorsal view of male (Sichuan) **E** dorsal view of male (Fujian) **F** dorsal view of male (Yunnan). Scale bar = 5 mm.

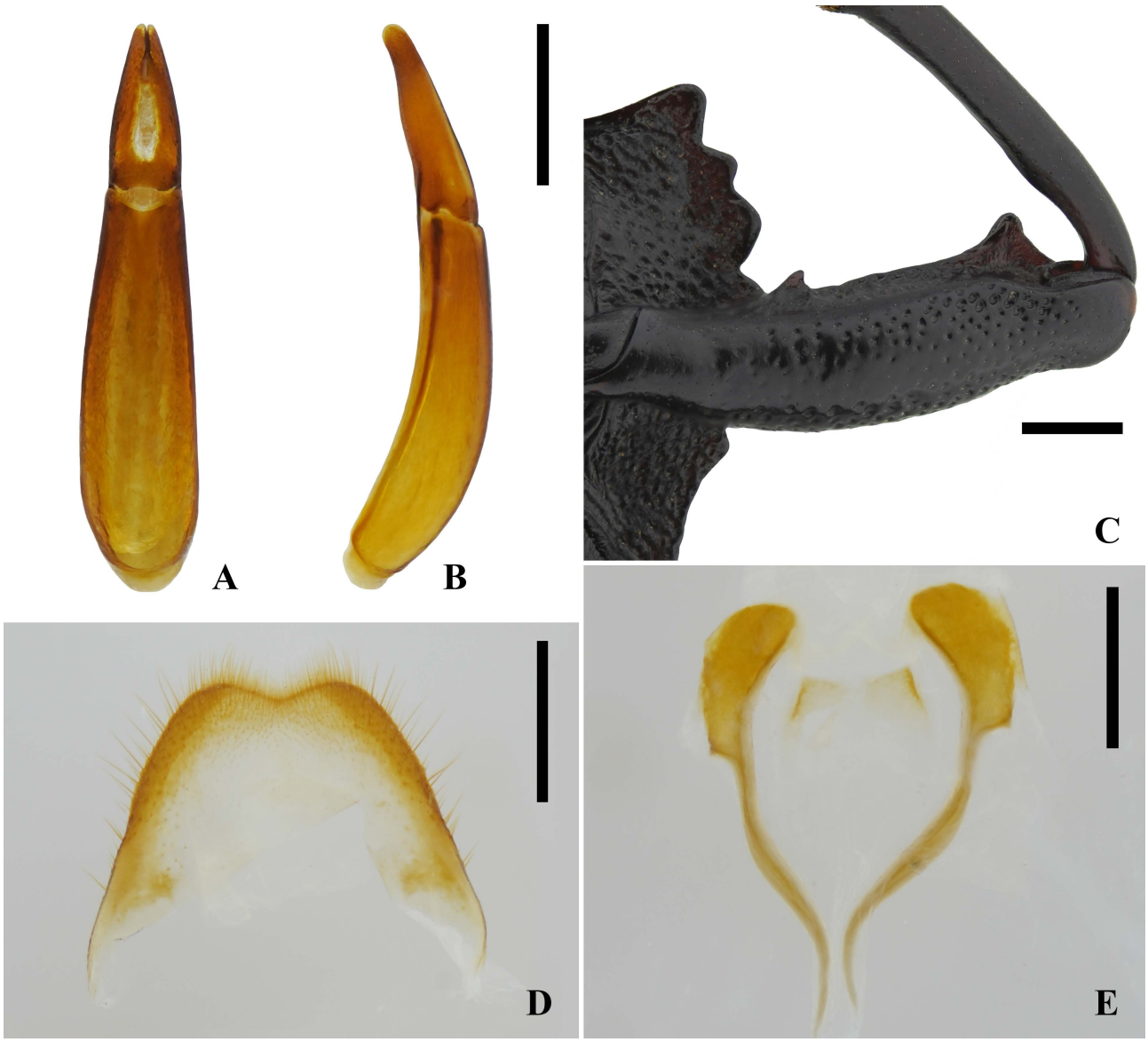

FIGURE 2. Diagnostic characters of *Catapiestus bispinosus* Yang & Guo, 2018: **A, B** dorsal and lateral views of aedeagus **C** ventral view of male profemur **D** male abdominal sternite VIII **E** spiculum gastrale. Scale bars = 0.5 mm.

Catapiestus clavipes Lang & Ren, 2009 棒股扁轴甲

Figs 3A–C; 4A–E; 5

Catapiestus clavipes Lang & Ren, 2009: 196.

Type locality: "China, Hainan Province, Baisha County, Nankai Town, Daoda, 400–500 m".

Material examined. 2♂♂1♀ (HNAU), **Fujian**, Sanming City, Youxi County, Banmian Town, 300–600 m, 2022-XI-21, local leg.; 1♀ (CTKL), **Fujian**, Nanping City, Wuyishan City, Xingcun Town, 27°41'20"N, 117°53'11"E, 337 m, 2024-XI, Tao-Kun Liao leg.

Diagnosis. Body flat, robust, black and dim shiny, with nearly parallel sides. Length 13.8–15.4 mm, width 4.2–4.6 mm. Head transverse, trapezoidal, covered with punctures. Pronotum transverse, widest at middle; disc convex, with deep mid-longitudinal groove, periphery densely punctured and becoming gradually finely punctured towards

center; lateral margins serrated, with 7–10 teeth; anterior angles obtuse, nearly triangular; posterior angles acute. Elytra nearly parallel, each elytron with 9 punctured striae; intervals coarse, 6th ridged on apical 1/4, 7th ridged on basal 3/4, two ridges non-intersecting. Profemora robust, extending on anterior side, with one cylindrical denticle at apex of extension and one smaller near apex of profemora; meso- and metafemora slender, without denticles.

Remarks. The occurrence in central Fujian indicates that this species has a broader distribution than previously thought. Additionally, both *C. bispinosus* and *C. clavipes* were found in Xingcun Town, Nanping City, Fujian. Compared with the former species, *C. clavipes* can be distinguished by the following characters: body size larger, colour darker; profemora denticles are distinct, with one larger denticle near base and one smaller denticle near apex, contrary to the former. Based on the examined specimens, *C. bispinosus* was found at higher altitudes generally above 1200 meters, while *C. clavipes* was found below 700 meters above sea level. It shows an altitudinal distribution difference between the two species. The biogeography of the genus *Catapiestus* is worth further study.

Distribution. China: Hainan (original record); Fujian (**new record**).

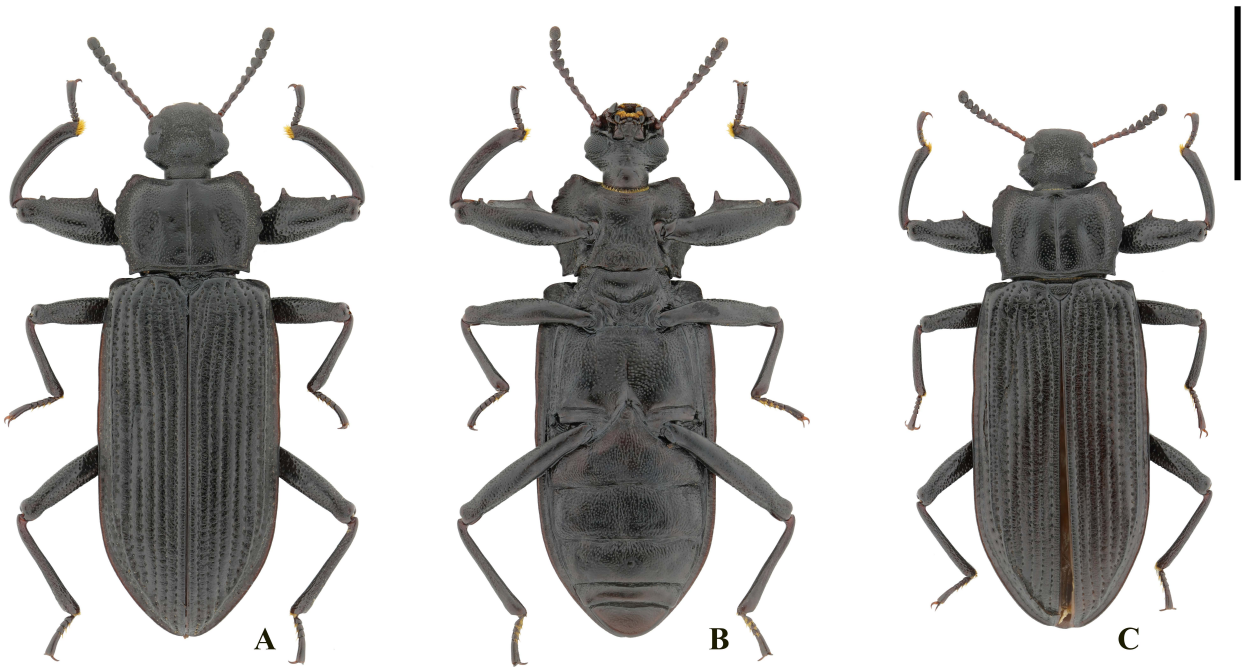

FIGURE 3. Habitus of *Catapiestus clavipes* Lang & Ren, 2009, Fujian: **A, B** dorsal and ventral views of male **C** dorsal view of female. Scale bar = 5 mm.

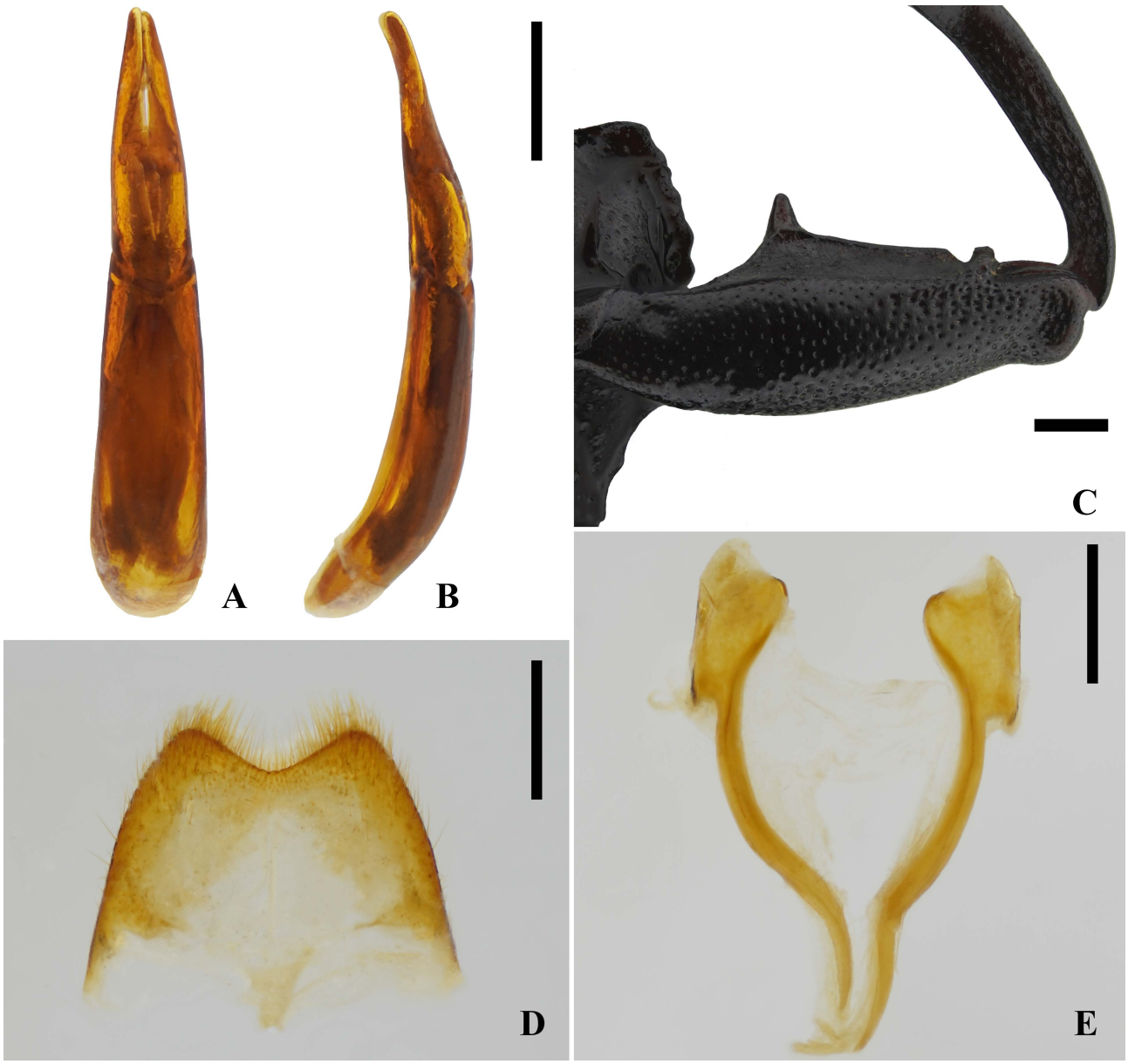

FIGURE 4. Diagnostic characters of *Catapiestus clavipes* Lang & Ren, 2009: **A, B** dorsal and lateral views of aedeagus **C** ventral view of male profemur **D** male abdominal sternite VIII **E** spiculum gastrale. Scale bars = 0.5 mm.

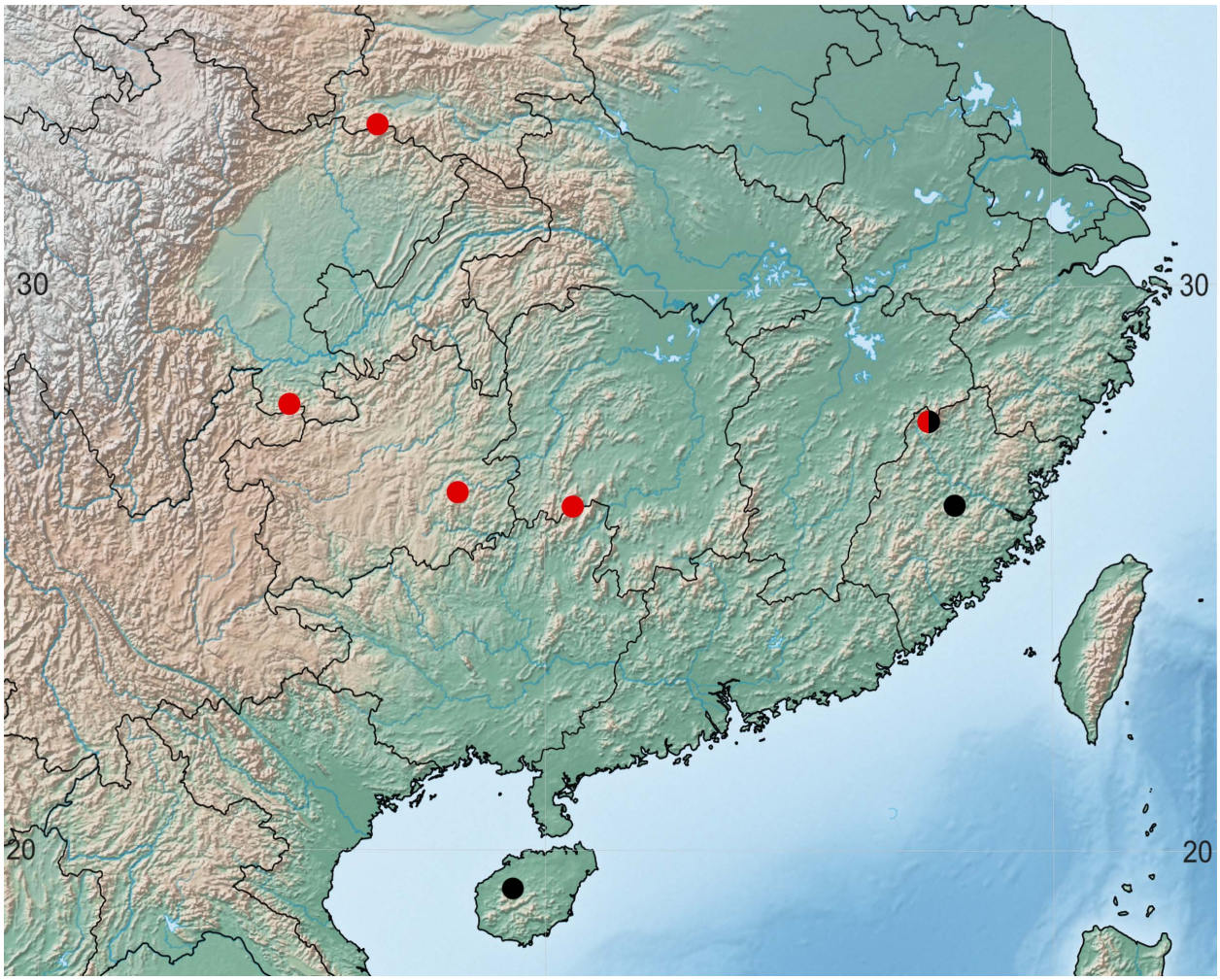

FIGURE 5. Known distribution of *Catapiestus bispinosus* (**red dots**) and *C. clavipes* (**black dots**).

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Additional information

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